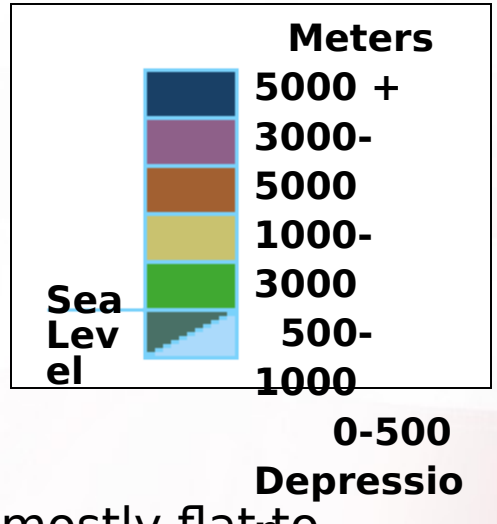
Benin


NIGER
Niger
BURKINA FASO
Malanville
Kandi
Natitingou
Djougou
Mont Sokbaro
Parakou
TOGO
NIGERIA
Bohicon
Cové
Abomey
Lokossa
PORTO-NOVO
Ouidah
Cotonou
GHANA
Bight of Benin
0 30 60 km
0 30 60 mi

Benin: Environmental Issues

- Topography
- Climate



Climate is tropical; hot, humid in south; semiarid in north

Terrain:mostly flat to undulating plain; some hills and low mountains

lowest point: Atlantic Ocean 0 m

highest point: Mont Sokbaro 658 m

Benin: Environmental Issues

- Air :
  - Urban areas
  - CO, sulfur dioxide, particulate matter
  - Lead, dust ozone exceed international standards
- Soil:
  - Localized to specific areas surrounding industrial facilities and waste disposal sites.
  - Significant exposure to contaminants in soil is unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water.
  - Usually presents a low risk to human health.

Benin: Environmental Issues

- Food:
  - Plants and freshwater fish due to insecticides.
  - Short-term exposure to insecticides may cause Central Nervous System and GI problems
  - Lower level insecticides: minimal risk
- Water:
  - Unreliable water systems
  - Contaminated water supplies with raw sewage widespread
  - Industrial Discharge

Benin: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens

Benin: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Malaria, Yellow Fever
  - Sexually Transmitted Diseases: HIV/AIDS, Hepatitis B
  - Water-contact Diseases: Schistosomiasis
  - Respiratory Diseases: Meningococcal meningitis

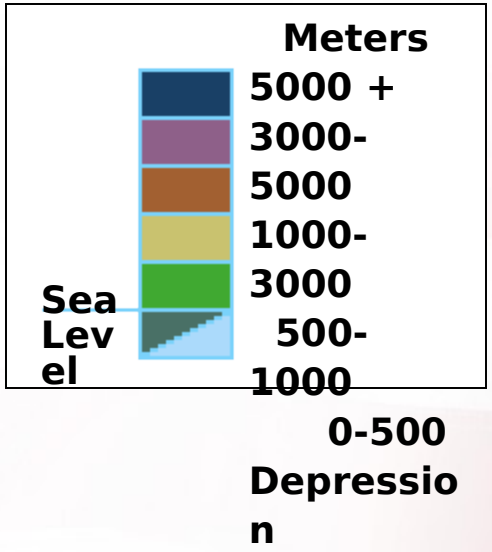
Benin: Diseases of Operational Importance

- Diseases of potential risk
  - Food and waterborne Diseases: Brucellosis,Cholera, Hepatitis E
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Crimean-Congo hemorrhagic fever, Dengue fever, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, Gambiense trypanosomiasis (African), Murine typhus (flea-borne), and West Nile fever.
  - Sexually Transmitted Diseases: Gonorrhea and Chlamydia.
  - Respiratory Diseases: Tuberculosis
  - Water-contact Diseases: Leptospirosis
  - Soil-contact: Lassa Fever
  - Animal-contact: Anthrax, Q-Fever and Rabies

Burkina Faso

Burkina Faso: Environmental Issues

- Topography
- Climate



Climate tropical; warm, dry winters; hot, wet summers

Terrain: Mostly flat to dissected, undulating plains; hills in west and southeast

lowest point: Mouhoun (Black Volta) River 200 m
highest point: Tena Kourou 749 m

Burkina Faso: Environmental Issues

- Air :
  - Low risk
  - Localized air contamination may occur near specific industrial facilities or urban areas.
  - sulfur dioxide, particulates, nitrogen oxides, and lead
- Soil:
  - Localized to specific areas surrounding industrial facilities and waste disposal sites.
  - 74 tons of obsolete pesticides stockpiled and may contribute to contamination
  - Significant exposure to contaminants in soil is unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water.
  - Usually presents a low risk to human health.

Burkina Faso: Environmental Issues

- Food:
  - Food may be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens
- Water:
  - Contaminated water supplies with raw sewage or fecal pathogens widespread
  - Nitrates

Burkina Faso: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens
  - Extreme heat

Burkina Faso: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Malaria
  - Sexually Transmitted Diseases: HIV/AIDS, Hepatitis B
  - Respiratory Diseases: Meningococcal meningitis
  - Water-contact Diseases: Schistosomiasis

Burkina Faso: Diseases of Operational Importance

- Diseases of potential risk
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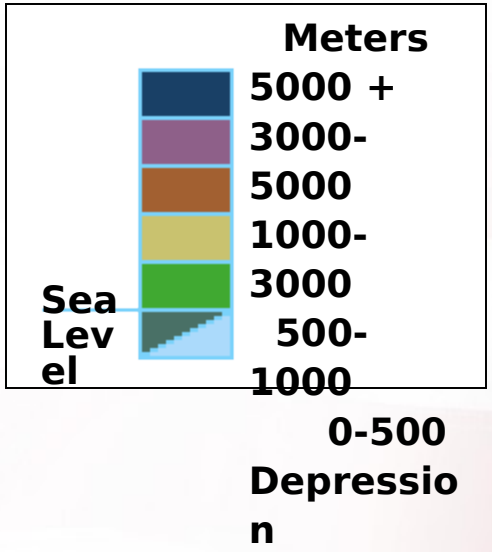
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Crimean-Congo hemorrhagic fever, Dengue fever, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, Gambiense trypanosomiasis (African), Murine typhus (flea-borne), West Nile fever and yellow fever.
  - Sexually Transmitted Diseases: Gonorrhea and Chlamydia.
  - Respiratory Diseases: Tuberculosis
  - Water-contact Diseases: Leptospirosis
  - Soil-contact: Lassa Fever
  - Animal-contact: Anthrax, Q-Fever and Rabies

Cote d'Ivoire

Cote d'Ivoire : Environmental Issues

- Topography
- Climate



Climate tropical along coast, semiarid in far north; three seasons - warm and dry (November to March), hot and dry (March to May), hot and wet (June to October)

Terrain: mostly flat to undulating plains; mountains in northwest

lowest point: Gulf of Guinea 0 m
highest point: Mont Nimba 1,752 m

Cote d'Ivoire : Environmental Issues

- Air :
  - Low risk
  - Localized air contamination may occur near specific industrial facilities or urban areas.

- Soil:
  - Localized to specific areas surrounding industrial facilities and waste disposal sites.
  - Significant exposure to contaminants in soil is unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water.
  - Usually presents a low risk to human health.

Cote d'Ivoire: Environmental Issues

- Food:
  - Food may be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens
- Water:
  - Untreated domestic sewage
  - Industrial wastewater.
  - Pesticides (aldrin, lindane, dieldrin, and endosulfan).

Cote d'Ivoire: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens

Cote d'Ivoire: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Malaria and Yellow Fever
  - Sexually Transmitted Diseases: HIV/AIDS, Hepatitis B
  - Water-contact Diseases: Schistosomiasis

Cote d'Ivoire: Diseases of Operational Importance

- Diseases of potential risk
  - Food and waterborne Diseases: Brucellosis,Cholera, Hepatitis E
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Crimean-Congo hemorrhagic fever, Dengue fever, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, Gambiense trypanosomiasis (African), Murine typhus (flea-borne), and West Nile fever.
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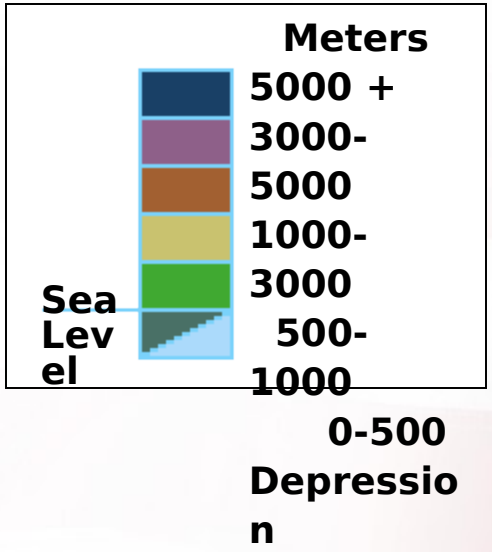
  - Respiratory Diseases: Meningococcal Meningitis and Tuberculosis
  - Water-contact Diseases: Leptospirosis
  - Soil-contact: Lassa Fever
  - Animal-contact: Anthrax, Q-Fever and Rabies

The Gambia

Smallest African Country

The Gambia : Environmental Issues

- Topography
- Climate



Climate tropical; hot, rainy season (June to November); cooler, dry season (November to May)

Terrain: flood plain of the Gambia river flanked by some low hills

lowest point: Atlantic Ocean 0 m
highest point: unnamed location 53 m

The Gambia : Environmental Issues

- Air :
  - Low risk
  - Localized air contamination may occur near specific industrial facilities or urban areas.
  - Solid wastes in townships and villages are burned at open-air sites
- Soil:
  - Localized to specific areas surrounding industrial facilities and waste disposal sites.
  - Significant exposure to contaminants in soil is unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water.
  - Usually presents a low risk to human health.

The Gambia: Environmental Issues

- Food:
  - Food may be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens
- Water:
  - Water contaminated with raw sewage.
  - Pesticides (organochlorines, organophosphates, and carbamates).

The Gambia: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens

The Gambia: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, Protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Dengue fever,Malaria Crimean-Congo hemorrhagic fever, Yellow fever.
  - Sexually Transmitted Diseases: Hepatitis B.
  - Respiratory Diseases: Meningococcal meningitis
  - Water-contact Diseases: Schistosomiasis

The Gambia: Diseases of Operational Importance

- Diseases of potential risk
  - Food and waterborne Diseases: Brucellosis,Cholera, Hepatitis E
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, Murine typhus (flea-borne) and West Nile fever.
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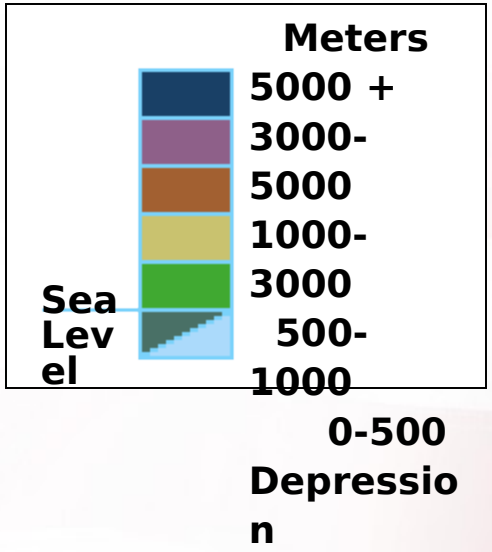
  - Soil Contact Diseases: Lassa Fever
  - Respiratory Diseases: Tuberculosis
  - Animal-contact: Anthrax, Q-Fever and Rabies

Ghana


0 50 100 km
0 50 100 mi
BURKINA FASO
Bolgatanga
BENIN
Tamale
CÔTE D'IVOIRE
TOGO
Lake Volta
Kumasi
Ho
Asamankese
Nsawam
Bight of Benin
Tarkwa
ACCRA
Tema
Cape Coast
Takoradi
Gulf of Guinea

Ghana : Environmental Issues

- Topography
- Climate



Climate tropical; warm and comparatively dry along southeast coast; hot and humid in southwest; hot and dry in north

Terrain: mostly low plains with dissected plateau in south-central area

lowest point: Atlantic Ocean 0 m
highest point: Mount Afadjato 880 m

Ghana : Environmental Issues

- Air :
  - Significant air contamination in Ghana is localized to dense residential and industrial areas
  - Particulate matter
  - In mining areas - sulfur dioxide and arsenic oxide.
  - Long and short term health effects

- Soil:
  - Localized to specific areas surrounding industrial facilities and waste disposal sites.
  - Significant exposure to contaminants in soil is unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water.
  - Usually presents a low risk to human health.

Ghana: Environmental Issues

- Food:
  - Food may be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens
- Water:
  - Untreated domestic sewage
  - Mercury and cyanide from mining

Ghana: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens

Ghana: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, protozoal diarrhea and Typhoid/paratyphoid fever
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  - Respiratory Diseases: Meningococcal meningitis

Ghana: Diseases of Operational Importance

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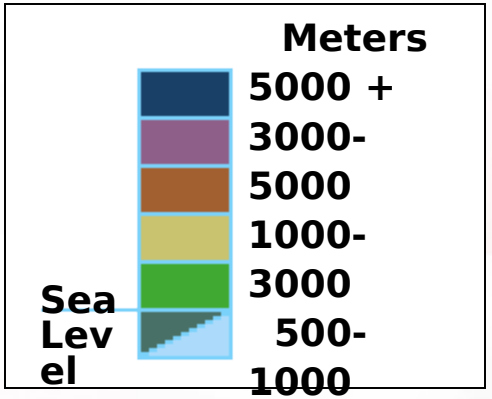
  - Water-contact Diseases: Leptospirosis
  - Soil-contact: Lassa Fever
  - Animal-contact: Anthrax, Q-Fever and Rabies

Guinea


0 50 100 km
0 50 100 mi
SENEGAL
THE GAMBIA
MALI
GUINEA-BISSAU
Labé
Siguiri
Boké
Kamsar
Fria
Kindia
Niger
Kankan
CONAKRY
SIERRA LEONE
Macenta
Nzérékoré
Mont Nimba
CÔTE D'IVOIRE
NORTH ATLANTIC OCEAN
LIBERIA
8
12

Guinea : Environmental Issues

- Topography
- Climate



Climate generally hot and humid; monsoonal-type rainy season (June to November) with southwesterly winds; dry season (December to May) with northeasterly harmattan winds

Terrain: generally flat coastal plain; hilly to mountainous interior

lowest point: **Atlantic Ocean 0 m**
highest point: **Mont Nimba 1,752 m**

Guinea: Environmental Issues

- Air
  - Vehicle emissions near capital.
  - Particulates-coughing, wheezing, and reduced lung function, especially in asthmatic individuals.
  - Some pollution near specific industrial and urban areas. Burning of garbage and wood.
- Soil
  - Low risk but should be avoided when possible.
  - Soil contamination near industrial facilities and waste disposal sites.
  - Significant exposure unlikely in the absence of wind, active digging, or leakage into ground water.

Guinea: Environmental Issues

- Food
  - Food may be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Water contaminated with raw sewage and microbes.
  - Other water sources may be contaminated with microbial and chemical contaminants.
  - Water sources near mining areas may be contaminated with metals.

Guinea: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage.
  - Runoff containing fecal pathogens.

Guinea: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, Protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Malaria and Yellow fever.
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  - Respiratory Diseases: Meningococcal meningitis
  - Soil Contact Diseases: Lassa Fever
  - Water-contact Diseases: Schistosomiasis

Guinea: Diseases of Operational Importance

- Diseases of potential risk
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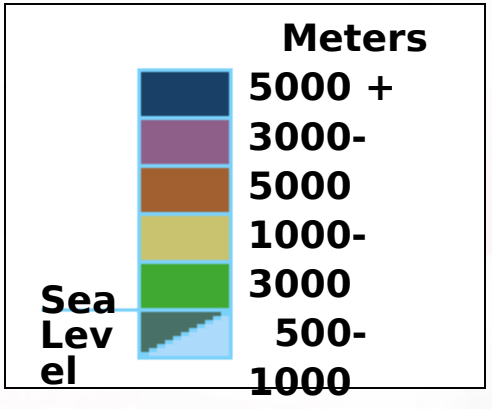
  - Sexually Transmitted Diseases: HIV/AIDS, Gonorrhea and Chlamydia.
  - Water-contact Diseases: Leptospirosis
  - Respiratory Diseases: Tuberculosis
  - Animal-contact: Anthrax, Q-Fever and Rabies

Guinea-Bissau

Guinea-Bissau: Environmental Issues

- Topography
- Climate



Climate tropical; generally hot and humid; monsoonal-type rainy season (June to November) with southwesterly winds; dry season (December to May) with northeasterly harmattan winds

Terrain: mostly low coastal plain rising to savanna in east

lowest point: **Atlantic Ocean 0 m**
highest point: **unnamed location in the northeast corner of the country 300 m**

Guinea-Bissau : Environmental Issues

- Air
  - Low risk
  - Some pollution near specific industrial and urban areas.
- Soil
  - Low risk but should be avoided when possible.
  - Soil contamination near industrial facilities and waste disposal sites.
  - Significant exposure unlikely in the absence of wind, active digging, or leakage into ground water.

Guinea-Bissau: Environmental Issues

- Food
  - Food may be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Water contaminated with raw sewage and microbes.

Guinea-Bissau : Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage.
  - Runoff containing fecal pathogens.

Guinea-Bissau : Diseases of Operational Importance

- **Highest risk** country
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Guinea-Bissau: Diseases of Operational Importance

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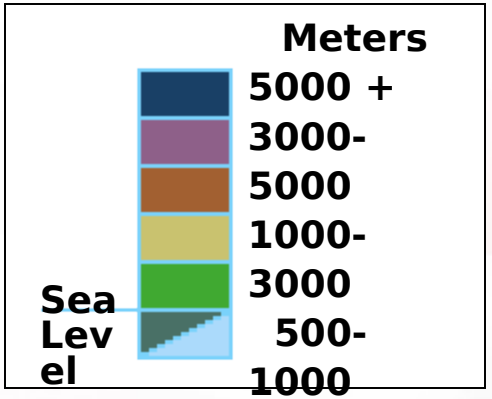
Liberia


Vionjama
Mount Wuteve
GUINEA
SIERRA LEONE
Yekepa
Gbarnga
Tubmanburg
Robertstown
CÔTE D'IVOIRE
MONROVIA
Harbel
Zwedru
Buchanan
NORTH ATLANTIC OCEAN
Greenville
0 30 60 km
0 30 60 mi
Harper

Liberia: Environmental Issues

- Topography
- Climate



Climate tropical; hot, humid; dry winters with hot days and cool to cold nights; wet, cloudy summers with frequent heavy showers

Terrain: mostly flat to rolling coastal plains rising to rolling plateau and low mountains in northeast

lowest point: **Atlantic Ocean 0 m**
highest point: **Mount Wuteve 1,380 m**

Liberia: Environmental Issues

- Air
  - Low risk
  - Some pollution near specific industrial and urban areas.
- Soil
  - Low risk but should be avoided when possible.
  - Soil contamination near industrial facilities and waste disposal sites.
  - Significant exposure unlikely in the absence of wind, active digging, or leakage into ground water.

Liberia: Environmental Issues

- Food
  - Food may also be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Water contaminated with raw sewage and microbes
  - Water sources near diamond mines may be contaminated with mercury and arsenic.

Liberia: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens,

Liberia: Diseases of Operational Importance

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Liberia: Diseases of Operational Importance

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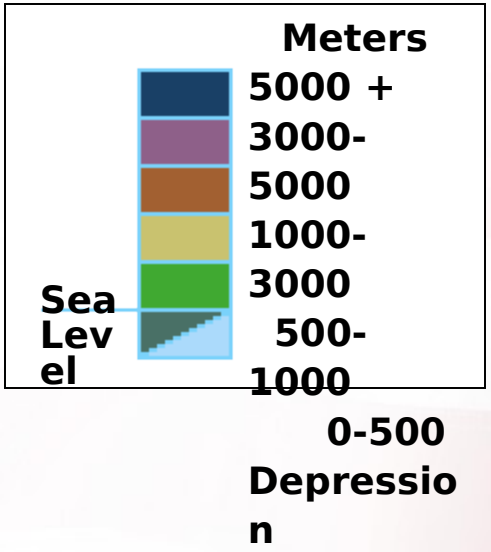
  - Sexually Transmitted Diseases: Gonorrhea and Chlamydia.
  - Water-contact Diseases: Leptospirosis
  - Respiratory Diseases: Meningococcal meningitis and Tuberculosis
  - Animal-contact: Anthrax, Q-Fever and Rabies
  - Person to Person: Ebola hemorrhagic fever

Mali

- **Government is a republic**

Mali: Environmental Issues

- Topography
- Climate



Subtropical to arid; hot and dry February to June; rainy, humid, and mild June to November; cool and dry November to February

Terrain:

lowest point: **Senegal River 23 m**
highest point: **Hombori Tondo 1,155 m**

Mali: Environmental Issues

- Air
  - Most air pollution due to localized burning of fuel, charcoal, wood, and brush (both deliberate and non-deliberate).
  - Contaminants from these sources include oxides of nitrogen and sulfur, particulates, and ozone.
  - Hot harmattan winds contribute to air contamination with dust and other particulate matter.
- Soil
  - Localized to specific areas surrounding industrial facilities and waste disposal sites.
  - Significant exposure to contaminants in soil is unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water.
  - Usually presents a low risk to human health.

Mali: Environmental Issues

- Food
  - In rural areas, empty pesticide containers reportedly are reused to store food products for the public.
  - Food may also be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Untreated municipal sewage
  - Industrial discharges in some waters
  - Excessive use of agricultural chemicals-carbamate, organochlorine, and organophosphate pesticides contaminates some water.
  - Ground and surface water near gold mines can contain levels of cyanide greater than US EPA standards.

Mali: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens.

Mali: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Malaria
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  - Respiratory Diseases: Meningococcal meningitis

Mali: Diseases of Operational Importance

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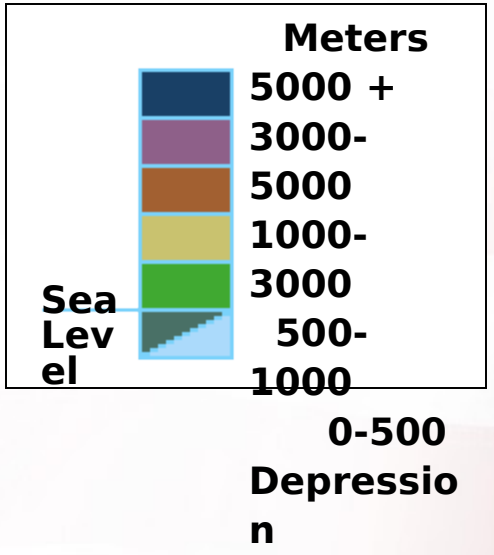
  - Respiratory Diseases: Tuberculosis
  - Soil-contact: Lassa Fever
  - Animal-contact: Anthrax, Q-Fever and Rabies

MAURITANIA

Ethnic tensions between its black minority population and the dominant Maur (Arab-Berber) populace.

Mauritania: Environmental Issues

- Topography
- Climate



Desert; constantly hot, dry, dusty

Terrain: mostly barren, flat plains of the Sahara; some central hills

lowest point: **Sebkha de Ndrhamcha -3 m**
highest point: **Kediet Ijill 910 m**

Mauritania: Environmental Issues

- Air
  - Low risk
  - Emissions from vehicles using leaded gasoline
  - Particulates from trash burning
- Soil
  - 38 tons of known obsolete pesticides are stockpiled in Mauritania
  - Localized to specific areas surrounding industrial facilities and waste disposal sites.
  - Significant exposure to contaminants in soil is unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water.

Mauritania: Environmental Issues

- Food
  - Fish processing with water contaminated with fuel oil and raw sewage.
  - Food may also be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Raw sewage
  - Surface water contamination during seasonal floods.
  - Agrochemical overuse and increasing industrial activities.

Mauritania: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens.
  - Temperature extremes

Mauritania: Diseases of Operational Importance

- **High risk** country
- Diseases of greatest risk
  - Food and water-borne: Bacterial diarrhea, Hepatitis A, Protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne: Malaria
  - Sexually Transmitted Diseases: Hepatitis B

Mauritania: Diseases of Operational Importance

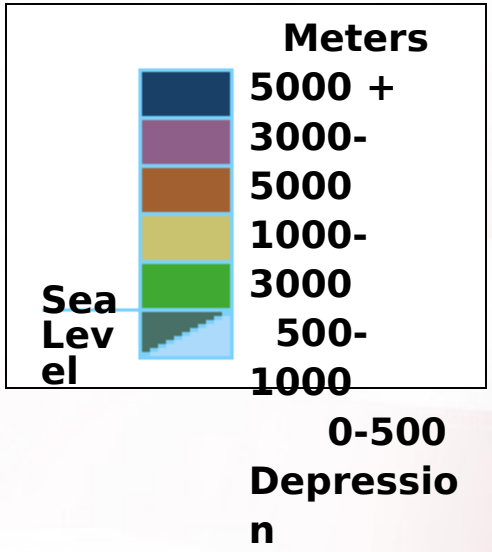
- Diseases of Potential Risk
  - Food and waterborne Diseases: Brucellosis,Cholera, Hepatitis E
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Crimean-Congo hemorrhagic fever, Dengue fever, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, Gambiense trypanosomiasis (African), Murine typhus (flea-borne), West Nile fever and Yellow fever
  - Sexually Transmitted Diseases: Gonorrhea,Chlamydia and HIV/AIDS
  - Water-contact Diseases: Leptospirosis, Schistosomiasis
  - Respiratory Diseases: Meningococcal Meningitis and Tuberculosis
  - Animal-contact: Anthrax, Q-Fever and Rabies

Niger


0 150 300 km
0 150 300 mi
LIBYA
ALGERIA
MALI
Agadez
Niger
Tahoua
NIAMEY
Maradi
Zinder
Diffa
CHAD
Lake Chad
Dosso
Gaya
BURKINA FASO
BENIN
TOGO
NIGERIA
CAMEROON

Niger: Environmental Issues

- Topography
- Climate



Desert; mostly hot, dry, dusty; tropical in extreme south.

Terrain: predominately desert plains and sand dunes; flat to rolling plains in south; hills in north

lowest point: Niger River 200 m
highest point: Mont Bagzane 2,022 m

Niger: Environmental Issues

- Air
  - Low risk
  - Some pollution near specific industrial and urban areas.
- Soil
  - Low risk
  - Localized to specific areas surrounding industrial facilities and waste disposal sites.
  - Significant exposure unlikely in the absence of wind-blown dust, active digging, or migration of contaminants from soil into ground water.

Niger: Environmental Issues

- Food
  - Food may be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Raw sewage
  - Nitrates

Niger: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens.

Niger: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Malaria
  - Sexually Transmitted Diseases: HIV/AIDS, Hepatitis B
  - Respiratory Diseases: Meningococcal meningitis

Niger: Diseases of Operational Importance

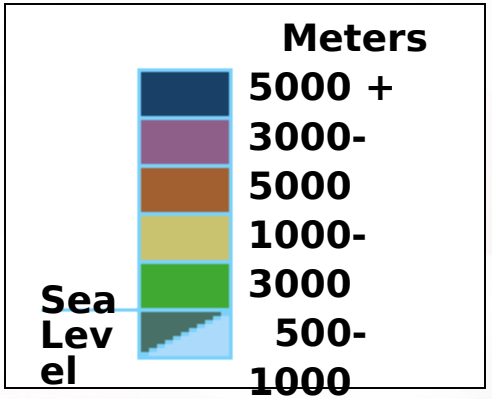
- Diseases of potential risk
  - Food and waterborne Diseases: Brucellosis,Cholera, Hepatitis E
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Crimean-Congo hemorrhagic fever, Dengue fever, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, West Nile fever and Yellow fever.
  - Sexually Transmitted Diseases: Gonorrhea and Chlamydia.
  - Respiratory Diseases: Tuberculosis
  - Water-contact Diseases: Leptospirosis, Schistosomiasis
  - Animal-contact: Anthrax, Q-Fever and Rabies

Nigeria

- Most populated country in Africa
- Rebuilding petroleum based economy
- Longstanding ethnic and religious tensions.

Nigeria: Environmental Issues

- Topography
- Climate



Climate varies; equatorial in south, tropical in center, arid in north.

Terrain: Southern lowlands merge into central hills and plateaus; mountains in southeast, plains in north.

Lowest point: **Atlantic Ocean 0 m**

Highest point: **Chappal Waddi 2,419 m**

Nigeria: Environmental Issues

- Air
  - Low risk
  - On-site disposal of gas by burning may lead to localized air contamination around oil and gas industry.
  - Some pollution near specific industrial and urban areas.
- Soil
  - Low risk but should be avoided when possible.
  - Sabotage of petroleum pipelines has led to some soil pollution in Nigeria
  - Soil contamination near industrial facilities and waste disposal sites.
  - Significant exposure unlikely in the absence of wind, active digging, or leakage into ground water.

Nigeria: Environmental Issues

- Food
  - Microbial and chemical contamination of local agricultural products.
  - Food may also be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Raw sewage primary water contaminant.
  - In southern Nigeria, dumping of untreated industrial wastes (heavy metals, petroleum, fertilizer.
  - Petroleum spills.

Nigeria: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens,
  - Air contamination from flaring of natural gas.

Nigeria: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, Protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Malaria
  - Sexually Transmitted Diseases: HIV/AIDS, Hepatitis B.
  - Soil Contact Diseases: Lassa Fever
  - Respiratory Diseases: Meningococcal meningitis

Nigeria: Diseases of Operational Importance

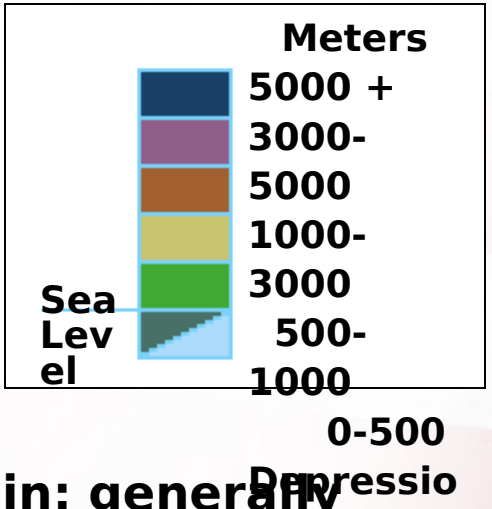
- Diseases of potential risk
  - Food and waterborne Diseases: Brucellosis,Cholera, Hepatitis E
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Crimean-Congo hemorrhagic fever, Dengue fever, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, Gambiense trypanosomiasis (African), Murine typhus (flea-borne), West Nile fever and Yellow fever
  - Sexually Transmitted Diseases: Gonorrhea and Chlamydia.
  - Water-contact Diseases: Leptospirosis, Schistosomiasis
  - Respiratory Diseases: Tuberculosis
  - Animal-contact: Anthrax, Q-Fever and Rabies

Senegal

- Southern separatist group sporadically has clashed with government forces.

Senegal: Environmental Issues

- Topography
- Climate



Climate tropical; hot, humid; rainy season (May to November) has strong southeast winds; dry season (December to April) dominated by hot, dry, harmattan wind.

Terrain: generally low, rolling, plains rising to foothills in southeast .

Lowest point: Atlantic Ocean 0 m
Highest point: unnamed feature near Nepen Diakha 581 m

Senegal: Environmental Issues

- Air
  - Low risk
  - Some pollution near specific industrial and urban areas.
- Soil
  - Low risk but should be avoided when possible.
  - Soil contamination near industrial facilities and waste disposal sites.
  - Significant exposure unlikely in the absence of wind, active digging, or leakage into ground water.

Senegal: Environmental Issues

- Food
  - Food may be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Raw sewage primary water contaminant.
  - Common practice to discard untreated domestic and industrial wastewater directly into local waterways
  - Microbial contamination of municipal water supplies is common.

Senegal: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens,

Senegal: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, Protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Dengue fever,Malaria Crimean-Congo hemorrhagic fever, Yellow fever.
  - Sexually Transmitted Diseases: Hepatitis B.
  - Respiratory Diseases: Meningococcal meningitis
  - Water-contact Diseases: Schistosomiasis

Senegal: Diseases of Operational Importance

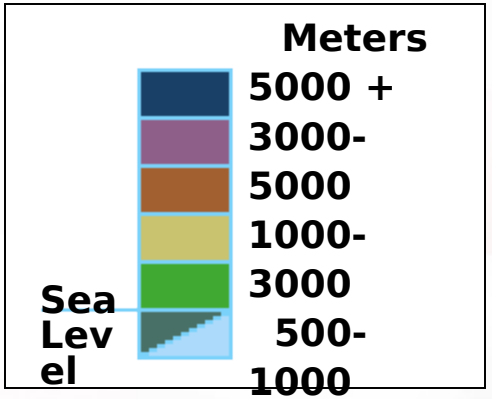
- Diseases of potential risk
  - Food and waterborne Diseases: Brucellosis,Cholera, Hepatitis E
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, Murine typhus (flea-borne) and West Nile fever
  - Sexually Transmitted Diseases: HIV/AIDS, Gonorrhea and Chlamydia.
  - Water-contact Diseases: Leptospirosis,
  - Soil Contact Diseases: Lassa Fever
  - Respiratory Diseases: Tuberculosis
  - Animal-contact: Anthrax, Q-Fever and Rabies

Sierra Leone

- Civil War
- One of the wettest countries in West Africa

Sierra Leone : Environmental Issues

- Topography
- Climate



Climate tropical; hot, humid; summer rainy season (May to December); winter dry season (December to April)

Terrain: coastal belt of mangrove swamps, wooded hill country, upland plateau, mountains in east

Lowest point: **Atlantic Ocean 0 m**
Highest point: **Loma Mansa (Bintimani) 1,948 m**

Sierra Leone: Environmental Issues

- Air
  - Low risk
  - Some pollution near specific industrial and urban areas.
- Soil
  - Low risk but should be avoided when possible.
  - Soil contamination near industrial facilities and waste disposal sites.
  - Significant exposure unlikely in the absence of wind, active digging, or leakage into ground water.

Sierra Leone: Environmental Issues

- Food
  - Microbial and chemical contamination of local agricultural products.
  - Food may also be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Most water contaminated with raw sewage.
  - Other water sources may be contaminated with microbial and chemical contaminants.
  - Water sources near mining areas may be contaminated with arsenic and other chemical wastes.
  - Agriculture industry can cause water contamination with nitrates.

Sierra Leone: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens,
  - Environmental contamination

- Greatest long-term environmental health risks.
  - Environmental contamination.

Sierra Leone: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, Protozoal diarrhea and Typhoid/paratyphoid fever
  - Vector-borne Diseases: Malaria and Yellow fever.
  - Sexually Transmitted Diseases: HIV/AIDS, Hepatitis B.
  - Soil Contact Diseases: Lassa Fever
  - Water-contact Diseases: Schistosomiasis

Sierra Leone: Diseases of Operational Importance

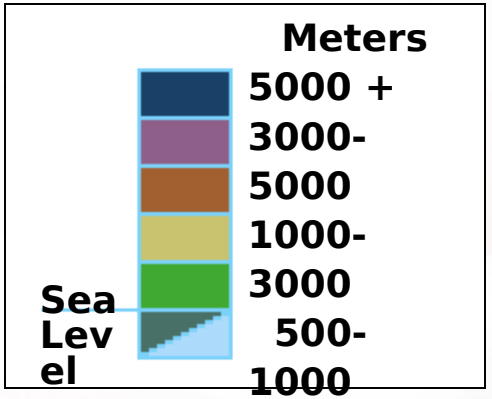
- Diseases of potential risk
  - Food and waterborne Diseases: Brucellosis,Cholera, Hepatitis E
  - Vector-borne Diseases: Boutonneuse fever (Mediterranean spotted fever), Chikungunya, Crimean-Congo hemorrhagic fever, Dengue fever, Leishmaniasis, Rift Valley fever, Sindbis (Ockelbo) virus, Gambiense trypanosomiasis (African), Murine typhus (flea-borne) and West Nile fever
  - Sexually Transmitted Diseases: Gonorrhea and Chlamydia.
  - Water-contact Diseases: Leptospirosis
  - Respiratory Diseases: Meningococcal meningitis and Tuberculosis
  - Animal-contact: Anthrax, Q-Fever and Rabies

Togo

- Human rights abuses
  - Political unrest

Togo : Environmental Issues

- Topography
- Climate



Climate tropical; hot, humid in south; semiarid in north

Terrain: gently rolling savanna in north; central hills; southern plateau; low coastal plain with extensive lagoons and marshes

Lowest point: **Atlantic Ocean 0 m**
Highest point: **Mont Agou 986 m**

Togo: Environmental Issues

- Air
  - Low risk
  - Slash and burn agriculture and the use of tropical wood for fuel contributes to seasonal, localized air contamination.
  - Some pollution near specific industrial and urban areas.
- Soil
  - Low risk but should be avoided when possible.
  - Soil contamination near industrial facilities and waste disposal sites.
  - Significant exposure unlikely in the absence of wind, active digging, or leakage into ground water.

Togo: Environmental Issues

- Food
  - Shellfish in coastal waters may be contaminated from raw sewage
  - Food may also be contaminated with industrial particulates, chemicals from soil, pesticides, fertilizers, and fecal pathogens.
- Water
  - Water contaminated with sewage.
  - Microbial contamination
  - Phosphate processing and improper disposal of mine tailings.
  - Soil erosion caused by deforestation may contribute to contamination of surface water with suspended solids and agricultural chemicals.

Togo: Environmental Issues

- Greatest short-term environmental health risks
  - Water contaminated with raw sewage
  - Runoff containing fecal pathogens.

Togo: Diseases of Operational Importance

- **Highest risk** country
- Diseases of greatest risk
  - Food and Waterborne Diseases: Bacterial diarrhea, Hepatitis A, Protozoal diarrhea and Typhoid/paratyphoid fever.
  - Vector-borne Diseases: Malaria and Yellow fever.
  - Sexually Transmitted Diseases: HIV/AIDS, Hepatitis B.
  - Respiratory Diseases**:** Meningococcal meningitis
  - Water-contact Diseases: Schistosomiasis

Togo: Diseases of Operational Importance

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  - Animal-contact: Anthrax, Q-Fever and Rabies